SAFETY DATA SHEET
2,2’-Bipyridyl

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name 2,2’-Bipyridyl
Product number FB06175
Synonyms; trade names 2,2’-Dipyridine, 2,2’-Bipyridine
CAS number 366-18-7
EC number 206-674-4

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Laboratory reagent. Manufacture of substances. Research and development.

1.3. Details of the supplier of the safety data sheet
Supplier Carbosynth Ltd
8&9 Old Station Business Park
Compton
Berkshire
RG20 6NE
UK
+44 1635 578444
+44 1635 579444
info@carbosynth.com

1.4. Emergency telephone number
Emergency telephone +44 7887 998634

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards Not Classified
Health hazards Acute Tox. 3 - H301 Acute Tox. 3 - H311
Environmental hazards Not Classified

2.2. Label elements
EC number 206-674-4

Pictogram

Signal word Danger
2,2'-Bipyridyl

Hazard statements
H301+H311 Toxic if swallowed or in contact with skin.

Precautionary statements
P264 Wash contaminated skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P312 Call a POISON CENTRE/doctor if you feel unwell.

2.3. Other hazards
No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances
Product name 2,2'-Bipyridyl
CAS number 366-18-7
EC number 206-674-4
Chemical formula C₁₀H₈N₂

SECTION 4: First aid measures

4.1. Description of first aid measures
General information Get medical advice/attention if you feel unwell.
Inhalation Remove person to fresh air and keep comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention if symptoms are severe or persist.
Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if symptoms are severe or persist.
Skin contact Remove contaminated clothing. Rinse with water. Continue to rinse for at least 15 minutes. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist.
Eye contact Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

4.2. Most important symptoms and effects, both acute and delayed
General information See Section 11 for additional information on health hazards.

4.3. Indication of any immediate medical attention and special treatment needed
Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
Specific hazards None known.
Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Oxides of nitrogen.
5.3. Advice for firefighters

Special protective equipment for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Provide adequate ventilation. Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions

Environmental precautions

Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Wear protective clothing as described in Section 8 of this safety data sheet. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid generation and spreading of dust. Avoid contact with skin and eyes. Avoid inhalation of dust and vapours.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Keep container tightly closed. Store at room temperature.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

No exposure limits known for ingredient(s).

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.
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Hand protection
Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection
Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Particulate filters should comply with European Standard EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls
Keep container tightly sealed when not in use.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance
Solid.

Colour
White. to Yellow. or Red.

Odour
No data available.

Odour threshold
No data available.

pH
No data available.

Melting point
No data available.

Initial boiling point and range
No data available.

Flash point
113°C Closed cup.

Evaporation rate
No data available.

Flammability (solid, gas)
No data available.

Upper/lower flammability or explosive limits
No data available.

Vapour pressure
No data available.

Vapour density
No data available.

Relative density
No data available.

Solubility(ies)
Soluble in water.

Partition coefficient
No data available.

Auto-ignition temperature
No data available.

Decomposition Temperature
No data available.

Viscosity
No data available.

Explosive properties
No data available.

Oxidising properties
No data available.

9.2. Other information

Molecular weight
156.18

SECTION 10: Stability and reactivity
2,2'-Bipyridyl

10.1. Reactivity
Reactivity
No data available.

10.2. Chemical stability
Stability
Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
Conditions to avoid
Avoid heat.

10.5. Incompatible materials
Materials to avoid
Strong oxidising agents.

10.6. Hazardous decomposition products
Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg)
100.0
Species
Rat
Notes (oral LD₅₀)
Acute Tox. 3 - H301 Toxic if swallowed.
ATE oral (mg/kg)
100.0
Acute toxicity - dermal
Acute toxicity dermal (LD₅₀ mg/kg)
938.0
Species
Rat
Notes (dermal LD₅₀)
Acute Tox. 3 - H311 Toxic in contact with skin.
ATE dermal (mg/kg)
300.0
Acute toxicity - inhalation
Notes (inhalation LC₅₀)
Based on available data the classification criteria are not met.
Skin corrosion/irritation
Animal data
Based on available data the classification criteria are not met.
Serious eye damage/irritation
Based on available data the classification criteria are not met.
Respiratory sensitisation
Based on available data the classification criteria are not met.
Skin sensitisation
Based on available data the classification criteria are not met.
Germ cell mutagenicity
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Genotoxicity - in vitro
Based on available data the classification criteria are not met.

Carcinogenicity
Based on available data the classification criteria are not met.

IARC carcinogenicity
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure
Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Not relevant. Solid.

General information
Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
Dust may irritate the respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Ingestion
May cause stomach pain or vomiting. May cause severe internal injury.

Skin contact
A single exposure may cause the following adverse effects: Pain.

Eye contact
Dust may cause slight irritation.

Route of exposure
Ingestion Inhalation Skin and/or eye contact

Target organs
No specific target organs known.

RTECS #
DW1750000

Ecotoxicity
Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity
Toxicity
Based on available data the classification criteria are not met.

12.2. Persistence and degradability
Persistence and degradability
The degradability of the product is not known.

12.3. Bioaccumulative potential
Bioaccumulative potential
No data available on bioaccumulation.

Partition coefficient
No data available.

12.4. Mobility in soil
Mobility
No data available.
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information
Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 2811
UN No. (IMDG) 2811
UN No. (ICAO) 2811
UN No. (ADN) 2811

14.2. UN proper shipping name

Proper shipping name (ADR/RID) TOXIC SOLID, ORGANIC, N.O.S. (2,2'-Bipyridyl)
Proper shipping name (IMDG) TOXIC SOLID, ORGANIC, N.O.S. (2,2'-Bipyridyl)
Proper shipping name (ICAO) TOXIC SOLID, ORGANIC, N.O.S. (2,2'-Bipyridyl)
Proper shipping name (ADN) TOXIC SOLID, ORGANIC, N.O.S. (2,2'-Bipyridyl)

14.3. Transport hazard class(es)

ADR/RID class 6.1
ADR/RID classification code T2
ADR/RID label 6.1
IMDG class 6.1
ICAO class/division 6.1
ADN class 6.1

Transport labels

14.4. Packing group

ADR/RID packing group III
IMDG packing group III
ADN packing group III
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ICAO packing group III

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant No.

14.6. Special precautions for user
EmS F-A, S-A
ADR transport category 2
Emergency Action Code 2X
Hazard Identification Number 60
(ADR/RID)
Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations
Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.

EU legislation

15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

Inventories
US - TSCA
Present.

SECTION 16: Other information
2,2'-Bipyridyl

### Abbreviations and acronyms used in the safety data sheet
- **ADR**: European Agreement concerning the International Carriage of Dangerous Goods by Road.
- **ADN**: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
- **RID**: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- **IATA**: International Air Transport Association.
- **ICAO**: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
- **IMDG**: International Maritime Dangerous Goods.
- **CAS**: Chemical Abstracts Service.
- **ATE**: Acute Toxicity Estimate.
- **LC₅₀**: Lethal Concentration to 50% of a test population.
- **LD₅₀**: Lethal Dose to 50% of a test population (Median Lethal Dose).
- **EC₅₀**: 50% of maximal Effective Concentration.
- **PBT**: Persistent, Bioaccumulative and Toxic substance.
- **vPvB**: Very Persistent and Very Bioaccumulative.

### Training advice
Only trained personnel should use this material.

### Revision date
09/11/2017

### Revision
1

### SDS number
144926

### Hazard statements in full
- **H301**: Toxic if swallowed.
- **H311**: Toxic in contact with skin.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.